

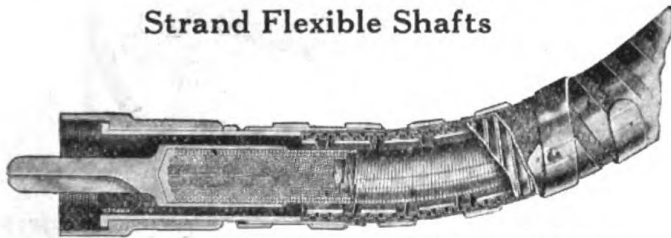
Strand Flexible Shafts and Equipments

For Grinding, Drilling, Polishing, Buffing, Scratch Bushing Etc.

Few mechanical devices are of broader utility than the Strand flexible shaft. These equipments are used in foundries, machine shops, die and tool shops, railroad shops, mines, rubber industries, woodworking plants, automobile factories, auto body plants, stone quarries, car shops, frog and switch plants, street railways and by mosaic and terrazzo workers, concrete finishers, contractors, etc. In fact there is hardly an industry in which it will not effect a substantial saving in time and labor.

These equipments are built for fast and efficient work and long service; they are made in several types and sizes with ratings of from $\frac{1}{8}$ to 2 horse-power, both for motor and belt drive.

Strand Flexible Shafts



Furnished Vulcanized Rubber or Metal Covered Casings



Core Casing and Spindle



Wire Core With Ends



Casing With Couplings



Metal or Vulcanized Rubber Casings

The Casings used in connection with our Flexible Shafts are neatly designed and strongly constructed. See Inner Liner G, Stop Wire H, Asbestos Packing I, Flexible Metal Tubing J, Wire Braiding K, Reinforcements L, Clearance F. This design of Casing prevents accidental short bends beyond a safe radius.

The interlocking feature of our Casings provides for safety in handling, strength and durability.

Wire Cores

In protecting the WIRE CORE SHAFT through our method of attaching the driving and driven ends to the core (see illustration, end A. to Shaft E.) greater strength and durability have been obtained.

STRAND WIRE CORE SHAFTS are made in our factory under the most careful supervision and by specially designed machinery. Each core or shaft consists of a number of layers of the very highest quality music wire, wound alternately in opposite directions, every layer accurately wound, producing the strongest Flexible shaft made.

Specifications Wire Cores and Casings

No.	Size of Core with Ends	Size of Casing with Couplings	H. P. Rating	R.P.M.
2	$\frac{3}{16}$ " x 4'	$\frac{1}{2}$ " x 4'	$\frac{1}{8}$ H.P.	1800
4	$\frac{5}{16}$ " x 5'	$1\frac{1}{16}$ " x 5'	$\frac{1}{4}$ H.P.	1800
5	$\frac{7}{16}$ " x 5'	$\frac{7}{8}$ " x 5'	$\frac{1}{4}$ H.P.	900
6	$\frac{1}{2}$ " x 6'	1" x 6'	$\frac{1}{2}$ H.P.	900
7	$\frac{5}{8}$ " x 7'	$1\frac{1}{8}$ " x 7'	1 H.P.	900
7-A	$\frac{3}{4}$ " x 7'	$1\frac{1}{4}$ " x 7'	$1\frac{1}{2}$ H.P.	900
8	$\frac{7}{8}$ " x 7'	$1\frac{1}{2}$ " x 7'	2 H.P.	400

Note. Flexible Shaft Speeds Specified above are only given in the rating of H. P. Transmitted, at the lower speeds. See R. P. M. tables shown in specifications, of our various type machines.

All wire cores are furnished to operate clockwise or (right hand) unless otherwise specified. May be furnished for counter-clockwise or (left hand) when so ordered.

We wind our cores from the highest grade Music Wire.

See that the "STRAND" stamp is on every Flexible Shaft you buy.

The genuine "STRAND" is the best in the world.

List Prices Flexible Shafts, Cores, Casings and Spindles

Flexible Shaft No.	2	4	5	6	7	7A	8
Core with Ends.....	\$ 9.80	\$18.50	\$20.80	\$32.10	\$ 56.50	\$ 68.50	\$ 90.00
Casing with Couplings.....	17.20	21.50	23.20	34.90	57.50	65.50	86.00
Core Casing and Spindle.....	46.00	60.00	68.00	96.00	150.00	170.00	220.00
Core and Casing with Ends and Couplings.....	27.00	40.00	44.00	67.00	114.00	134.00	176.00

Strand Flexible Shafts and Equipments

**Type M2— $\frac{1}{8}$ H. P.
For Light Bench Work**



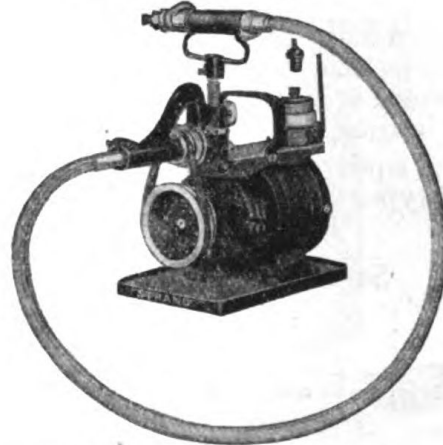
This machine is very convenient for small work. It is mounted on an adjustable column as shown. Similar equipment furnished with M-2 Machines includes Motor, Countershaft, Adjustable Column, Flexible Shaft, Hand Grinding Spindle, Switch, Cord Plug.

Specifications of Type M-2 Machine

Current	Grinding Wheel Capacity	Speeds R.P.M.	Size of Flex. Shaft	Shipping Wt.	List Price
110 D.C. 220/ or Alternating 60 cycle Single Phase	2"x $\frac{1}{4}$ x $\frac{1}{4}$	1700 3000 5200	Core $\frac{3}{16}$ "x4' O.D. Casing $\frac{1}{2}$ "	65 lbs.	\$117.00

State correct current and voltage desired. Motors of voltages other than those specified herein subject to special price.

**Type MS4— $\frac{1}{4}$ H. P.
For General Bench Work**



This machine is mounted on plain cast Base as shown in illustration. The equipment furnished consists of Motor, Base and Switch, Three-speed Countershaft, Flexible Shaft with Spindle extension Cord and Plug, Spindle.

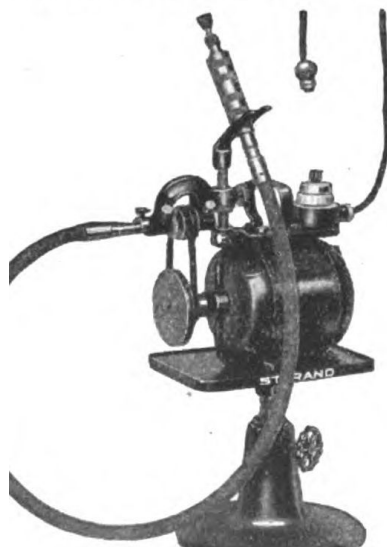
Specifications of Type MS-4 Machine

H.P.	Current	Grinding Wheel Capacity	Speeds R.P.M.	Size of Flex. Shaft	Shipping Wt.	List Price
$\frac{1}{4}$	110 D.C. 220/ or Alternating 60 cycle Single Phase	4"x $\frac{3}{8}$ x $\frac{3}{8}$ "	1700 3000 5200	Core $\frac{5}{16}$ x5' O.D. Casing $\frac{11}{16}$ "	65 lbs. With 30' Stand 115 lbs.	\$129.00

State correct current and voltage desired.

Motors of voltages other than those specified herein are subject to special price.

**Type RF-M4— $\frac{1}{4}$ H. P.
For Tool and Die Makers**



**RF-M4 Attachment
10,000 R. P. M.**



RF-M4 Attachments



10M

Extra Attachment subject to additional price.

Complete equipment consists of $\frac{1}{4}$ H.P. motor. Mounted on bench type swivel column, switch, wiring, cord and plug. Three-Speed Motor Countershaft No. 4, 2 Belts, Flexible Shaft 5 ft. long, Ball-Bearing Hand Piece with Collet, for $\frac{1}{4}$ " R.D. Shanks, Shaft Holder, full set of No. 501 Coarse Rotary Files, high speed steel and hand cut, eight assorted shapes. Aluminum Holder for same, 3x1 Rubber Polishing Drum and Adapter, with emery cloth bands. Eight grinding Wheels $\frac{1}{2}$ " diameter to 3"x $\frac{1}{4}$ " thickness, 1-3"x $\frac{1}{8}$ " Elastic Wheel, 3 Grinding Wheel Spindles, 1 set Wrenches.

H.P.	Speeds	Shipping Wt. Lbs.	List Price	10-M Attachment
$\frac{1}{4}$	1700 3000 5200	95	\$202.50	\$52.50

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Strand Flexible Shafts and Equipments

Type M5— $\frac{1}{4}$ H. P.
For General Machine Shop

An
All Round
Useful
Tool
For the
Machine
Shop

This machine furnished without Portable Stand if desired.

Regular equipment consists of Motor, Stand, Three-speed Countershaft, Flexible Shaft, Spindle, Switch and extension cord.

Used very extensively for grinding, externally and internally, polishing, drilling, sanding, buffing, etc.

Specifications of Type M-5 Machine

H.P.	Current	Grinding Wheel Capacity	Speeds R.P.M.	Size of Flex. Shaft	Shipping Weight	List Price
$\frac{1}{4}$	110 D.C. 220 or Alternating 60 cycle Single Phase	$5 \times \frac{1}{2} \times \frac{3}{8}$	900 1800 3600	Core $\frac{3}{8} \times 5'$ O. D. Casing $\frac{1}{8}''$	With Stand 115 lbs. Without Stand 70 lbs.	\$160.50 \$130.50

State correct current and voltage desired.

Motors of voltages other than those specified herein are subject to special price.

Type MP5— $\frac{1}{4}$ H. P.

Metal Pattern Makers Equipment

This machine is especially designed for use in the finishing of metal patterns fully equipped with Set 501 high speed, hand cut, Rotary Files, Drill Chuck. $\frac{3}{8}''$ capacity, Sanding Drum $3 \times 3''$ machine. Furnished complete as illustrated.

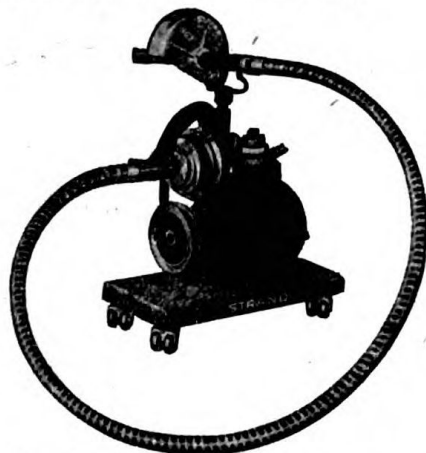
Specifications

H.P.	Speeds	Wt. Lbs.	List Price
$\frac{1}{4}$	900 1800 3600	125	\$220.50

**Type M6— $\frac{1}{2}$ H. P. and
Type M7—1 H. P.**

On Caster Base For General Grinding

For
General
Grinding
of
Castings
Polishing
and
Scratch
Brushing



Specifications of Type M-6 Machine

H.P.	Current	Grinding Wheel Capacity	Speeds R.P.M.	Size of Flex. Shaft	Shipping Weight	List Price
$\frac{1}{2}$	110 D.C. 220 or Alternating 60 cycle Single Phase	$6 \times \frac{3}{4} \times \frac{1}{2}$	1000 1800 3200	Core $\frac{1}{2} \times 6'$ O.D. Casing $1''$	135 lbs.	\$225.00

Specifications Type M-7 Alternating Current Machine

H.P.	Current	Grinding Wheel Capacity	Speeds R.P.M.	Size of Flex. Shaft	Shipping Weight	List Price
1	220 Alternating 60 cycles Three Phase	$8 \times 1 \times \frac{3}{4}$	1200 2400 2700	Core $\frac{5}{8} \times 7'$ O.D. Casing $1 \frac{1}{8}''$	With Caster Base 175 lbs.	\$300.00

State correct current and voltage desired.

Motors of voltages other than those specified herein are subject to special price.

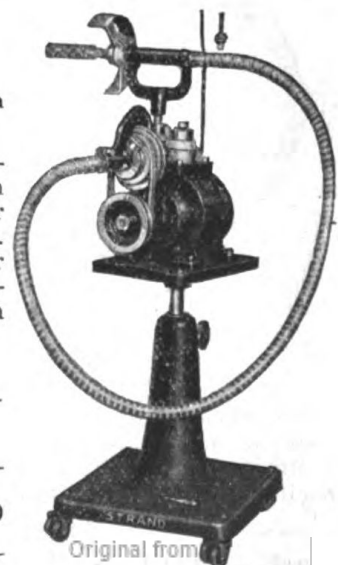
Type M6-C— $\frac{1}{2}$ H. P.

Portable Swivel Column For General Use

This machine is mounted on a Portable cast iron column, adjustable for height and swivel base. Used very extensively for general grinding, polishing, buffing and scratch brushing.

Specifications

H.P.	Speeds	Wt. Lbs.	List Price
$\frac{1}{2}$	1000 1800 3200	165	\$250.50



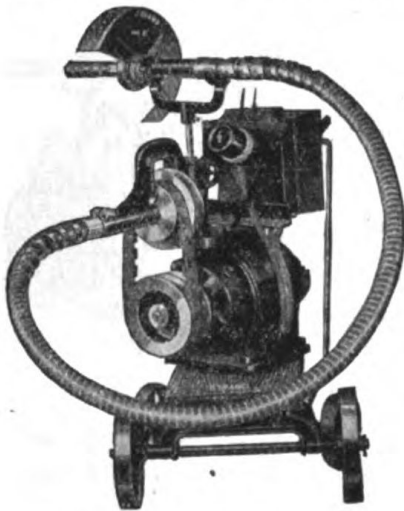
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Strand Flexible Shafts and Equipments

Heavy Type Grinding Machines

**Type M8—2 H. P.
For Large Casting Grinding**



The M-8 machine is designed and equipped for heavy grinding and polishing, mounted on Swivel Base and Truck as illustrated and described herein. Regular equipment furnished includes Two-Speed Countershaft, Flexible Shaft complete, Grinding Spindle, Wheel Guard, Detachable Handle, 2 H. P. Motor Base, Switch Rheostat and Truck.

H.P.	Current	Grinding Wheel Capacity	Speeds R.P.M.	Size of Flex. Shaft	Shipping Weight	List Price
2	220 D.C. or Alternating 60 cycle Three Phase	10"x1 1/4" x 3/4"	1750 2400	Core 3/4"x7"	A.C. 310 lbs.	A.C.
				O.D. Casing 1 1/2"	D.C. 400 lbs.	D.C. \$450.00 \$525.00

State correct current and voltage desired.

Motors of voltages other than those specified herein are subject to special price.

**Type M7A—1 1/2 H. P.
For Large Casting Grinding**



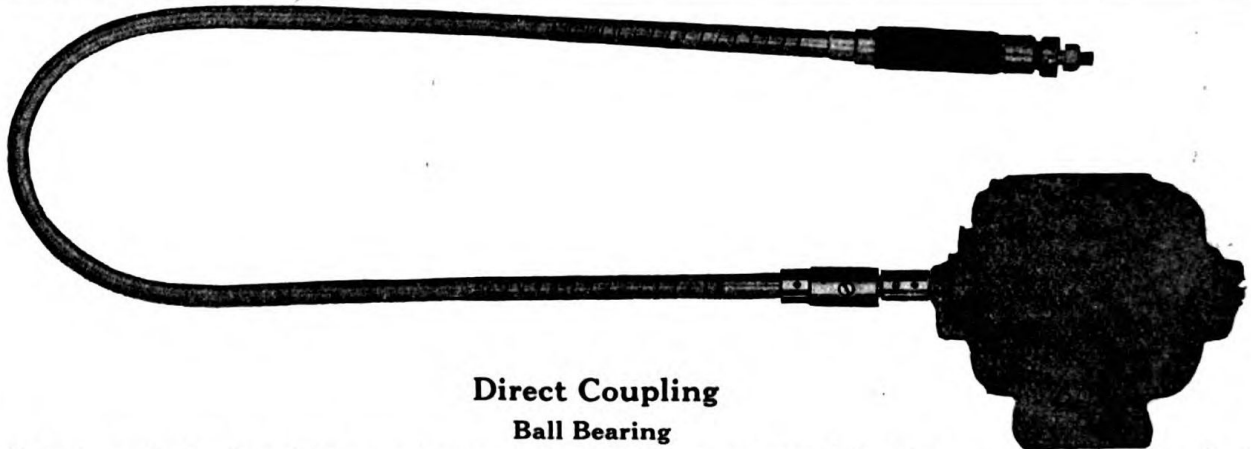
This machine is extensively used in Foundries for grinding heavy castings and is also highly recommended on Street Railway track work for grinding Welds, Frogs and Switches. Also Rail Drilling when so ordered.

Regular equipment furnished with this machine includes Motor, Three-Speed Countershaft, Flexible Shaft, Spindle, Guard for Grinding Wheel, Detachable Handle, Truck, and Switch.

H.P.	Current	Grinding Wheel Capacity	Speeds R.P.M.	Size of Flex. Shaft	Shipping Weight	List Price
1 1/2	220 D.C. 60 cycle Three Phase	8"x1 1/2" x 3/4"	1200 2400 2700	Core 3/4"x7" O.D. Casing 1 1/4"	275 lbs.	\$367.50

State correct current and voltage desired.

Motors of voltages other than those specified herein are subject to special price.



**Direct Coupling
Ball Bearing**

The above illustration shows our direct coupling-ball bearing designed for the purpose of operating flexible shafts direct from motor shaft. This direct coupling is especially recommended for the smaller sizes of our flexible shafts, from No. 2 to No. 7A capacities from 1/8 H. P. to 1 1/2 H. P. When ordering, specify diameter of motor shaft, length, and keyway if any, and H. P. of motor.

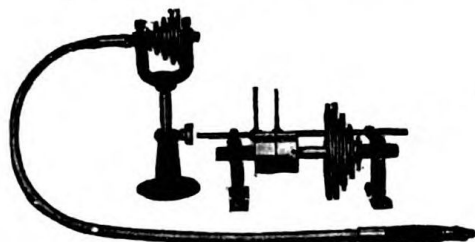
Prices

No. 2....**\$12.00** No. 4....**\$12.00** No. 5....**\$15.00** No. 6....**\$18.00** No. 7....**\$24.00** No. 7A....**\$24.00**

Strand Flexible Shafts and Equipments

Bench Type Belt Drive

Types, C4, C5, C6, C7



List Price

C-4.....	\$ 99.00
C-5.....	108.00
C-6.....	132.00
C-7.....	175.50

Machines furnished as illustrated.

	Capacities	Size	Flexible Shaft
C-4	4x $\frac{3}{8}$ x $\frac{3}{8}$ Wheels	Core Casing	$\frac{5}{16}$ x5' Diam., $1\frac{1}{16}$ "
C-5	5x $\frac{1}{2}$ x $\frac{3}{8}$ Wheels	Core Casing	$\frac{7}{16}$ x5' Diam., $\frac{7}{8}$ "
C-6	6x $\frac{3}{4}$ x $\frac{1}{2}$ Wheels	Core Casing	$\frac{1}{2}$ x6' Diam., 1"
C-7	8x1 x $\frac{3}{4}$ Wheels	Core Casing	$\frac{5}{8}$ x7' Diam., $1\frac{1}{8}$ "

Vertical Type Machines



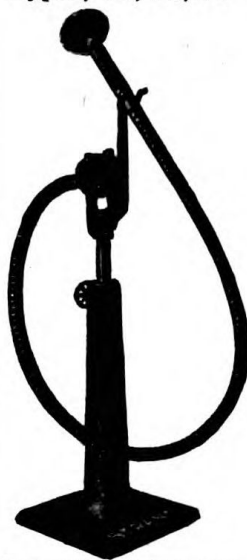
H.P.	Type	Speeds	List Price
$\frac{1}{4}$	V-4	1725 R.P.M.	\$132.00
$\frac{1}{4}$	V-4	3400 R.P.M.	142.50
$\frac{1}{4}$	V-5	1725 R.P.M.	138.00
$\frac{1}{4}$	V-5	3400 R.P.M.	148.50
$\frac{1}{2}$	V-6	1725 R.P.M.	183.00
$\frac{1}{2}$	V-6	3400 R.P.M.	187.50
1	V-7	1725 R.P.M.	256.50
1	V-7	3400 R.P.M.	273.00
$1\frac{1}{2}$	V-7 $\frac{1}{2}$	1725 R.P.M.	294.00
$1\frac{1}{2}$	V-7 $\frac{1}{2}$	3400 R.P.M.	315.00
2	V-8	1725 R.P.M.	345.00
2	V-8	3400 R.P.M.	367.50

Furnished as illustrated in all standard voltages.

Motors of special cycles or phases subject to additional price.

Floor Type Belt Drive

Types, F5, F6, F7

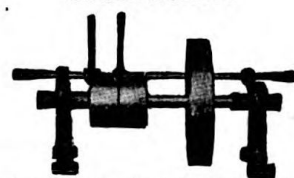


Size	Flexible Shaft	List Price
F-5	Core, $\frac{7}{16}$ x5' Casing, Dia., $\frac{7}{8}$ "	\$108.00
F-6	Core, $\frac{1}{2}$ x6' Casing Dia., 1"	\$135.00
F-7	Core, $\frac{5}{8}$ x7' Casing Dia., $1\frac{1}{8}$ "	175.50

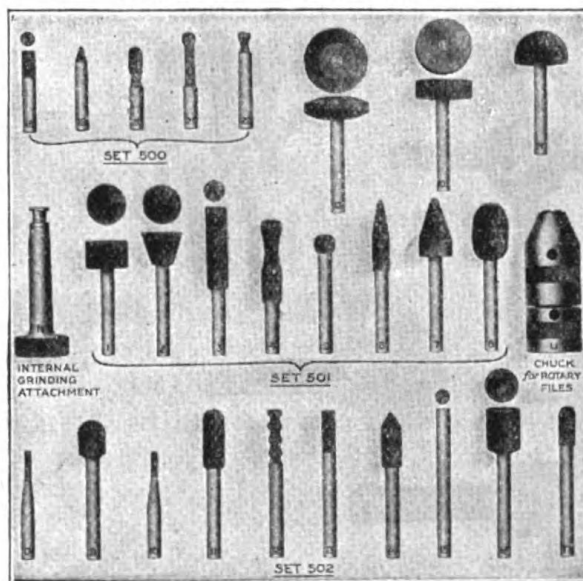
Capacities

F-5	5x $\frac{1}{2}$ x $\frac{3}{8}$ Wheels
F-6	6x $\frac{3}{4}$ x $\frac{1}{2}$ Wheels
F-7	8x1 x $\frac{3}{4}$ Wheels

Countershaft



Strand Rotary Files High Speed Steel Hand Cut



The above shows many shapes and sizes of Rotary Files made of High Speed Steel and used with the Flexible Shaft Machines. The chuck "U" is arranged to attach direct to the hand spindles of the machines and will receive the shanks of all the Rotary Files shown above. Attachment N is used for operating very small diameter grinding wheels and is also arranged to attach direct to the hand spindles.

Metal Pattern Makers and Die Sinkers especially will appreciate the value of the Rotary Files on their class of work. They operate very successfully on aluminum, brass, cast iron and steel.

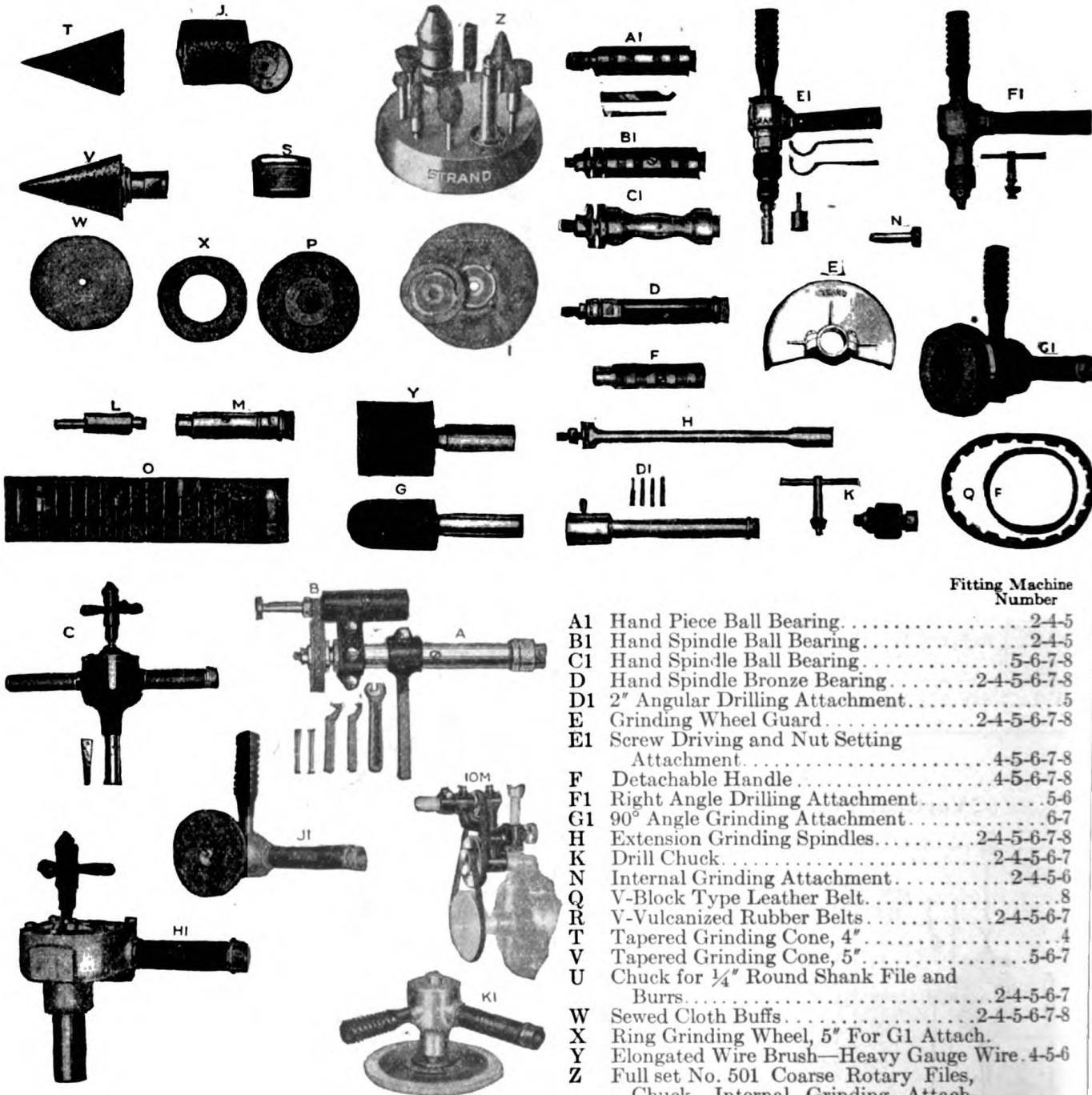
Sold in sets or single lots as required—also in coarse or fine cut. In ordering specify by number either in sets or Single Files.

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Strand Flexible Shafts and Equipment

Attachments—Fitting Machines of Various Types and Sizes



	Fitting Machine Number
A Tool Post Grinding Spindle.....	4-5-6-7
B High Speed Grinding Attachment.....	4-5-6-7
C Drilling Attachment $\frac{1}{4}$ " to $\frac{3}{4}$ ".....	6-7
H1 Drilling Attachment $\frac{3}{4}$ " to $1\frac{1}{2}$ ".....	7-8
J1 Disc Grinding Attachment, 5".....	5-6
K1 Disc Grinding Attachment 9".....	6-7
10M High Speed Attachment..	4-5
A1 Hand Piece Ball Bearing.....	2-4-5
B1 Hand Spindle Ball Bearing.....	2-4-5
C1 Hand Spindle Ball Bearing.....	5-6-7-8
D Hand Spindle Bronze Bearing.....	2-4-5-6-7-8
D1 2" Angular Drilling Attachment.....	5
E Grinding Wheel Guard.....	2-4-5-6-7-8
E1 Screw Driving and Nut Setting Attachment.....	4-5-6-7-8
F Detachable Handle.....	4-5-6-7-8
F1 Right Angle Drilling Attachment.....	5-6
G1 90° Angle Grinding Attachment.....	6-7
H Extension Grinding Spindles.....	2-4-5-6-7-8
K Drill Chuck.....	2-4-5-6-7
N Internal Grinding Attachment.....	2-4-5-6
Q V-Block Type Leather Belt.....	8
R V-Vulcanized Rubber Belts.....	2-4-5-6-7
T Tapered Grinding Cone, 4".....	4
V Tapered Grinding Cone, 5".....	5-6-7
U Chuck for $\frac{1}{4}$ " Round Shank File and Burrs.....	2-4-5-6-7
W Sewed Cloth Buffs.....	2-4-5-6-7-8
X Ring Grinding Wheel, 5" For G1 Attach.	
Y Elongated Wire Brush—Heavy Gauge Wire.	4-5-6
Z Full set No. 501 Coarse Rotary Files, Chuck, Internal Grinding Attachment and Aluminum Holder.....	4-5-6
G Elongated Wire Brush—Fine Wire.....	4-5-6-7
I Circular Wire Brush.....	2-4-5-6-7-8
J Rubber Polishing Drum.....	2-4-5-6-7-8
L Reducing Coupling.....	5-6-7
M Multiple Unit Coupling.....	5-6-7-8
O Full Set Scraping Burrs.....	4-5-6-7
P Grinding Wheel.....	2-4-5-6-7-8
S Grease.....	

10M High Speed Attachment.. 4-5

Order Attachments by letters specified above, and state Type of Machine for which they are desired.